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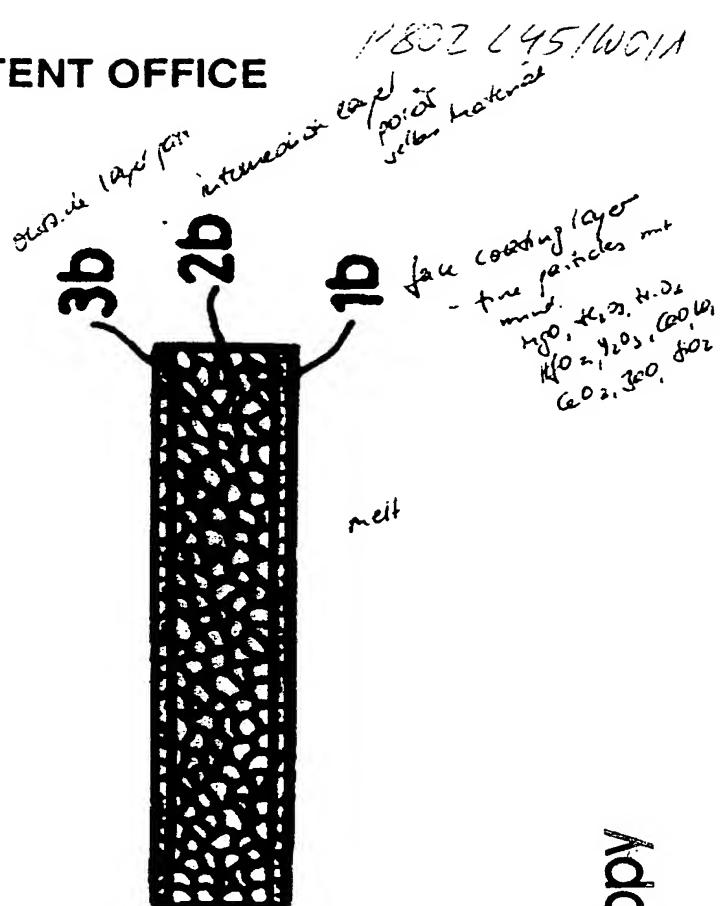
APPLICATION DATE : 01-07-83
 APPLICATION NUMBER : 58120498

APPLICANT : AGENCY OF IND SCIENCE & TECHNOL;

INVENTOR : TAKAYANAGI TAKESHI;

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TITLE : INVESTMENT SHELL MOLD FOR UNIDIRECTIONAL SOLIDIFICATION CASTING OF SUPER ALLOY



ABSTRACT : PURPOSE: To improve the dimensional accuracy and casting surface of a unidirectionally solidified casting by making the face coat of an investment shell mold to be used for unidirectional solidification casting of a super heat resistant alloy and the material on the outside layer thereof approximately the same in the coefft. of thermal expansion in the stage of forming said mold.

CONSTITUTION: A face coating layer 1b which is in contact with a molten metal is constituted of extra fine particles of refractories which are hardly reactional with the molten super alloy, for example, ≥ 1 kind among MgO, Al₂O₃, ZrO₂, HfO₂, Y₂O₃, CaO, La₂O₃, CeO₂, BaO and SiO₂ and the intermediate layer 2b and outside layer part 3b on the outside thereof are formed porously of particles of refractories having the same quality as the quality of the face coat layer and having approximately the same coefft. of thermal expansion in the stage of forming an investment shell mold for casting the super heat resistant alloy. The casting having an excellent casting surface and dimensional accuracy is obtd. without deformation of each layer owing to a difference in the coefft. of thermal expansion when the melt of the super heat resistant alloy is cast.

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